

REMARKS/ARGUMENTS

Claims 8-12, 15, 17, 19, 21, 27 and 64 have been amended by changing "it" in line 2 to -the carbohydrate-.

Claims 8-29, 64-76, and 78-79 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-28 and 57 of U.S. Patent No. 6,524,348 to Jewell et al. This rejection is respectfully traversed.

It is stated in the rejection that the sodium hypochlorite of the Jewell et al. patent is a latent source of chlorine dioxide under the reaction conditions set forth in Jewell et al. It is stated that this is obvious from the paragraph bridging columns 5 and 6 and line 15 of column 6 of Mason et al. U.S. Patent No. 4,889,654.

I understand the reaction in Mason et al. to be that chlorine dioxide is generated when an aqueous solution containing a water soluble metal chlorite, an acid, and a water soluble metal hypochlorite are reacted under acidic conditions, below about pH 3.7. The water soluble metal chlorite can be an alkali metal chlorite such as lithium chlorite, sodium chlorite, or potassium chlorite, or an alkaline earth metal chlorite such as calcium chlorite, magnesium chlorite or barium chlorite. The acid may be hydrochloric acid, sulfuric acid, boric acid, oxalic acid, acetic acid, citric acid, or an acidic salt such as sodium bicarbonate, potassium dihydrogen phosphate or sodium bisulfate as well as any combination of the foregoing provided the final solution has a pH below about 3.7. The water soluble metal hypochlorite may be an alkali metal hypochlorite such as lithium hypochlorite, sodium hypochlorite, potassium hypochlorite, calcium hypochlorite, magnesium hypochlorite, or barium hypochlorite. The metal hypochlorite is reacted with a mineral acid such as hydrochloric acid or an organic acid such as acetic acid to form hypochlorous acid.

There are two problems with the statement that Mason et al. shows that the sodium hypochlorite of the Jewell et al. patent is a latent source of chlorine dioxide under the reaction conditions of Jewell et al.

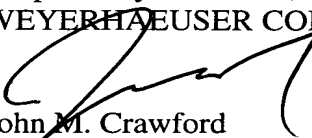
The first problem is the pH. The reaction of Mason et al takes place at a pH of 3.7 or less. Chlorine dioxide is formed under highly acidic conditions. The sodium hypochlorite of claim 27 of Jewell et al. is a secondary oxidant. The oxidation in which the secondary oxidant is used takes place at a pH of 8-11. This is stated in the paragraph bridging columns 5 and 6 of Jewell et al. The reaction takes place under alkaline conditions. Sodium hypochlorite would not be a latent source of chlorine dioxide at this pH.

The second problem is whether Mason et al. discloses that sodium hypochlorite is a latent source of chlorine dioxide. Mason et al. discloses a reaction which has both an alkali metal chlorite as well as an alkali metal hypochlorite. Mason et al. uses the hypochlorite to form hypochlorous acid. It is possible that the hypochlorous acid is oxidizing the chlorite to form chlorine dioxide. At the very least, Mason et al. does not disclose that chlorine dioxide is being formed from a hypochlorite alone. It is being formed from a reaction mixture of a chlorite, a hypochlorite and an acid.

Consequently, Mason et al. only discloses that chlorine dioxide can be formed from a reaction mixture of a water soluble alkali metal chlorite, a water soluble alkali metal hypochlorite and an acid at a pH of less than 3.7. These are not the conditions in the Jewell et al. patent so it cannot be assumed that sodium hypochlorite is a latent source of chlorine dioxide under the conditions of the Jewell et al. patent.

Reconsideration and allowance of claims 8-29, 64-76, and 78-79 is respectfully requested.

Respectfully submitted,
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